EOS Data Gateway
User Training
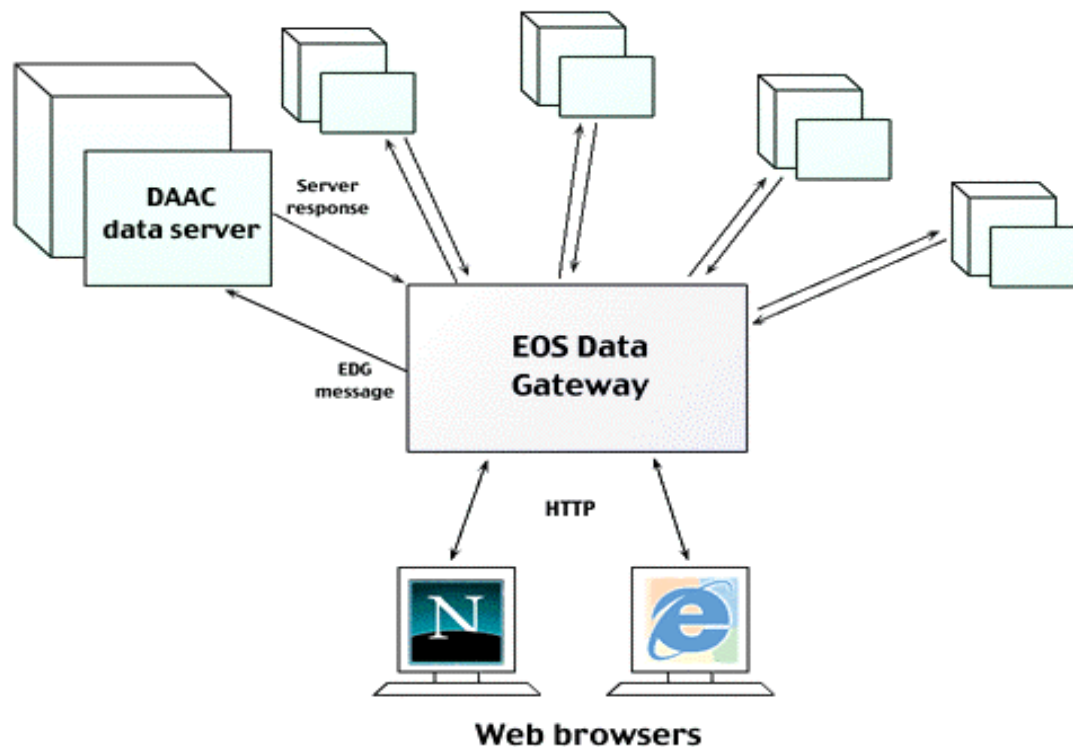
San Francisco, CA

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Class Structure

- Purpose: To enable student to search for, evaluate, and obtain land, atmospheric, and ocean science data available via the EOS Data Information System

- Focus is on the primary features of EDG. We will not cover <u>all </u>aspects.

- Class format: lectures, demonstrations, hands-on exercises, individual practice

- We use a "live" system. No canned or simulated demos (!!)

EOS Data Gateway: Overview

- User Interface for access to the data holdings in NASA's "Distributed Active Archive Centers" (DAACs) and other data centers worldwide.   EDG is NOT an HDF tool.

- Primary Functions
  - » Data Search and Order
  - » Search by Data Granule ID or Local Granule ID

- Secondary Functions (not covered in class)
  - » Summary Document Search
  - » Detailed Document Search

EOS Data Gateway: Architecture Overview

EDG Home Page

- Entry point for Data Search and Order
- 12 EDG installations worldwide – each has its own URL, e.g. Goddard EDG is at **http://eos.nasa.gov/imswelcome**
- Link to User Support contacts
- Links to information on using the system
- Links to data descriptions
- System news

EDG Home Page (cont'd)

- **User Registration / Forgot my Password**
  - » Establishes an account with the EOSDIS system
  - » Allows you to change your EOSDIS User Profile
  - » Saves your user preferences and most recent search criteria and results (not transferable between different EDG sites)

Using EDG: Build a Data Search

- First, some terms:
  - » **Attributes**: Characteristics which describe a data set, e.g., Parameter, Sensor, etc.
  - » **Keywords:** Valid search terms recognized by EDG and the data centers, e.g., Albedo, Cloud Amount, specific data set name, etc.
  - » **Filters**: Terms with which a list of keywords can be narrowed, e.g., Atmospheric Chemistry, etc.
  - » **Data Granule**: Smallest aggregation of data which is inventoried and retrievable.

Using EDG: Build a Data Search

- Choose search keywords
- Choose geographic search area
- Select date range (standard or julian format), and time range, if desired
- Select other search options, if desired
- Submit search

Using EDG: Choosing Search Keywords

- **Keyword Method 1: Data Set Lookup**
  - » Type in one or more keywords separated by semi-colons
  - » *Scientifically relevant* data sets returned
  - » Use resulting list in its entirety, or edit as needed
  - » Search options: used to limit number of data sets returned
    - – Match ANY ("or"), Match ALL ("and"), Match EXACTLY
- **Keyword Method 2: Choose specific keywords from categories of attributes**
  - » Keyword Dependencies: Keyword lists modified based on which keyword are chosen

Primary Search Attributes

- Parameter
  - » A measured or derived geophysical variable represented in the data

- Sensor
  - » A device that transmits or records a measurable signal in response to a specific physical stimulus

Primary Search Attributes

- ● Data Set
  - » A named collection of data/observations
  - » Data set ID is data center specific and determined by each data center
  - » Over 1500 data set ID valids
- ● Source
  - » The observation environment, entity, or structure that holds one or more data collection devices

Primary Search Attributes

- Data Center

  » Location of data archive

- Campaign

  » The project or study that obtained the data

- Processing Level

  » Amount of processing performed on the data

Extended Search Attributes

- Used for search criteria that are not common across all (or most) datasets
- Similar and related search criteria are grouped in categories
- 26 extended attributes categories

Using EDG: Choose Search Area

- Orthographic Map: Click on map and drag to form desired bounding rectangle
  - » Pan/Zoom
  - » Display of roads, political boundaries, rivers, etc.
- Equatorial Map and Polar Stereographic Maps: Click/choose 2 opposite corner points of desired bounding rectangle
- Type-in: (lat/long, path/row, single point)
- "Gazateer":   Tool to assist in finding lat/long of specific city, geographic feature, etc.

Using EDG: Choose Temporal and Other Options

- ● These options not required for a search
  - » Standard or Julian date formats
  - » Adjust max number of granules to be returned in a search
  - » Adjust max time limit for a search
  - » Ask for specific types of granules
  - » Customize what metadata is returned from the search (EOS data only)

Using EDG: Awaiting Search Results

- **Search Status Page**
  - » Displays list of data centers where search was sent
  - » Displays messages describing status of search, e.g. "connecting", "searching", "returning results"
- **Display "partial results"**
  - » Do not need to wait until all searches complete before looking at results
  - » Use "View Partial Results" link

EXERCISE #1: Build and Submit a Search

- You are interested in land surface data anywhere over the entire globe
- You want specific data sets:
  - » *LANDSAT-7 LEVEL-0R WRS-SCENE V002*

  - » *MODIS/TERRA VEGETATION INDICES 16-DAY L3 GLOBAL 500M ISIN GRID V003*

- Date/Time range: 3/21/2000 to 3/22/2000
- Request 5 granules per data set to be returned

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Using EDG: Evaluate Search Results

- From Data set Results: Read available documents
- List granules, customize the information displayed
- Save results to text file for spreadsheet use (optional)
- Examine attributes (Comprehensive granule info)
- Examine granule spatial/temporal footprint
- Examine "browse" (NOTE: this function available on multiple pages)
  - » "View image": Near real-time access and download of representative image
  - » "Request sample": Download image via FTP
- Store some results in your "folder" for later use (optional)

EXERCISE #2: Evaluate Search Results

- Using results from Exercise #1….
- Read the MODIS Vegetation Indices data summary information
- List the granules for all data sets returned
- Customize the granule list: Experiment with adding and deleting information in the list
- Map footprints of two MODIS granules simultaneously.
- Examine browse ("View Image") for one Landsat granule.

Using EDG: Data Ordering

- **More Terms:**
  - » **<u>Shopping Cart</u>**: Place for storing and preparing granules for order
  - » **<u>Order Options</u>**: Means by which data is to be sent to the user
- **Order Your Data**
  - » Place granules in shopping cart
  - » Read and accept/reject disclaimer statements
  - » Choose order options
  - » Review and submit order

Using EDG: Data Ordering

- **Ordering Granules from Multiple Data Sets**
  - » No need to submit first order for first data set, second order for second data set, etc.
  - » Instead, add all desired granules to shopping cart and submit as a single order
  - » EDG is smart enough to route order requests to pertinent data center(s)

EXERCISE #3: Data Ordering

- Using results from Exercise #1….

- Add all MODIS granules to the shopping cart

- Read and accept MODIS Data Quality Summary statements

- Select an Order Option of your choosing.

- Review your order summary

- Do NOT submit your order

Data Granule ID Search

- Search for specific granule(s) based on DAAC-generated ID numbers
- Building a Data Granule ID Search
  - » Access search form from "Search Types" link
  - » Required search criteria: Data set(s), type in data granule ID's
  - » Only selected data centers support Data Granule ID search
- Evaluate results via methods described earlier

Other EDG Functions

- User Preferences: Configure how you want defaults set, information displayed, etc.

- Help: Specific page help via link on blue-toned left side of every page in EDG

- Submit comments/questions

Common Errors

- Didn't fill in all information on form
- "Jumping" ahead before a page loads completely
- Account deleted. User needs to re-register
- Session expired due to lack of activity. Start a new session

Some Messages from Searches

- **Negative Search Results**
  - » No match found
  - » Search too broad; narrow spatial and/or temporal criteria
  - » Data not found due to spatial and/or temporal limitation
- **System Problems**
  - » Pertinent inventory system unavailable
  - » System error: please try again later
  - » Data center not responding to query; may be experiencing computer or network problems; try search again later.

Some Helpful Hints

- ## Navigation

  - » Use the links along left side of each page
  - » "Jump" Menu (bottom of each search page): Move to various pages without first going back to main search page
  - » Save/Upload a search to/from your local machine

- ## What do I do if I don't find data?

  - » Expand your search area
  - » Increase number of granules returned
  - » Submit a question